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DESCRIPTION OF SIX NEW SPECIES OF MUSCIDAE  
(DIPTERA) FROM THE ETHIOPIAN REGION

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Among the unidentified Muscidae loaned to me by the Smithsonian Institution I found the following six new species: *Musca spangleri* new species (Muscinae), *Musca setulosa* new species (Muscinae), *Morellia cerciformis* new species (Muscinae), *Phaonia eos* new species (Phaoniinae), *Spilogona ugandensis* new species (Phaoniinae), *Dimorphia thoracica* new species (Phaoniinae).

All of the specimens were collected by Dr. P. J. Spangler during 1968 in Kenya and Uganda.

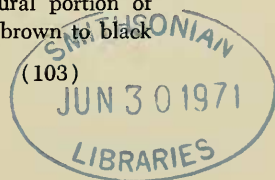
***Musca spangleri* new species**

(Figure 1)

This species runs in van Emden's (1939) key to *Musca sorbens* Wd., but it is easily distinguishable by the rather strong sigmoid posterior cross-vein, the mainly black thorax, the two weak anterior post *dc*, the dark calyptera, and the hypopygium.

*Male*: Head with face black though parafacialia and buccae in certain light with little grey pollinosity. Proboscis and palpi black, latter slightly curved. Antennae and antennal groove black. Arista with long rays, longest ones at least three times as long as width of third antennal segment. Frons black, at narrowest point not much wider than anterior ocellus. Frontal stripe reduced to a line. Parafrontal setae small and cruciate, becoming stronger towards antennal groove. Ocellar triangle without strikingly strong bristles, only one pair of long postverticals present. Eyes bare, facets of upper part enlarged.

Thorax in greatest portion blackened. On dorsal surface a median longitudinal vitta of grey pollinosity extends to postsutural portion of mesonotum. Humeral calli and lateral parts of postsutural portion of mesonotum grey dusted. Lateral portions of thorax dark brown to black.



in addition to the little grey dusted posterior portions of the mesopleuron and sternopleuron. Anterior thoracic spiracle white.

Chaetotaxy: acrostical bristles = 0 + 1, dorsocentrals = 2 + 4, anterior two post *dc* hardly distinguishable from clothing hairs, posthumeral = 2, humerals = 3, notopleurals = 2, sternopleurals = 1 + 2, mesopleuron with posterior row of about six to seven strong setae and one anterior one. Hypopleuron with some fine hairs above hind-coxa. Prosternum hairy. Wings brownish, membranae uniformly covered with microtrichia. Media sharply bent upwards,  $r_{4+5}$  at ventral base with some small light hairs. Upper calyptera brownish transparent with dark brown margin, lower calyptera yellow-brown. Halteres yellow. Legs dark brown to black; fore-tibia without posteroventral seta at middle; mid-tibia with four posteroventrals, lower two distinctly stronger; hind-tibia with two anteroventral bristles beyond middle and, just above middle, one strong anterodorsal and one posterodorsal bristle in addition to smaller dorsal setae. Pulvilli yellow to brownish.

Abdomen with yellow ground-color. Tergites I + II with small median brown patch, tergite III with narrow brown longitudinal vitta, widening at base and apex, tergite IV only at base and at apex with median brown patches. Last tergite darkened at middle, laterally yellow. Tergites IV and V laterally with small yellow pollinose spots. Sternite yellow, apical corners of last one dark brown. Hypopygium (Fig. 1) with broad cerci and paralobi.

Length: about 5.5 mm.

*Female*: Unknown.

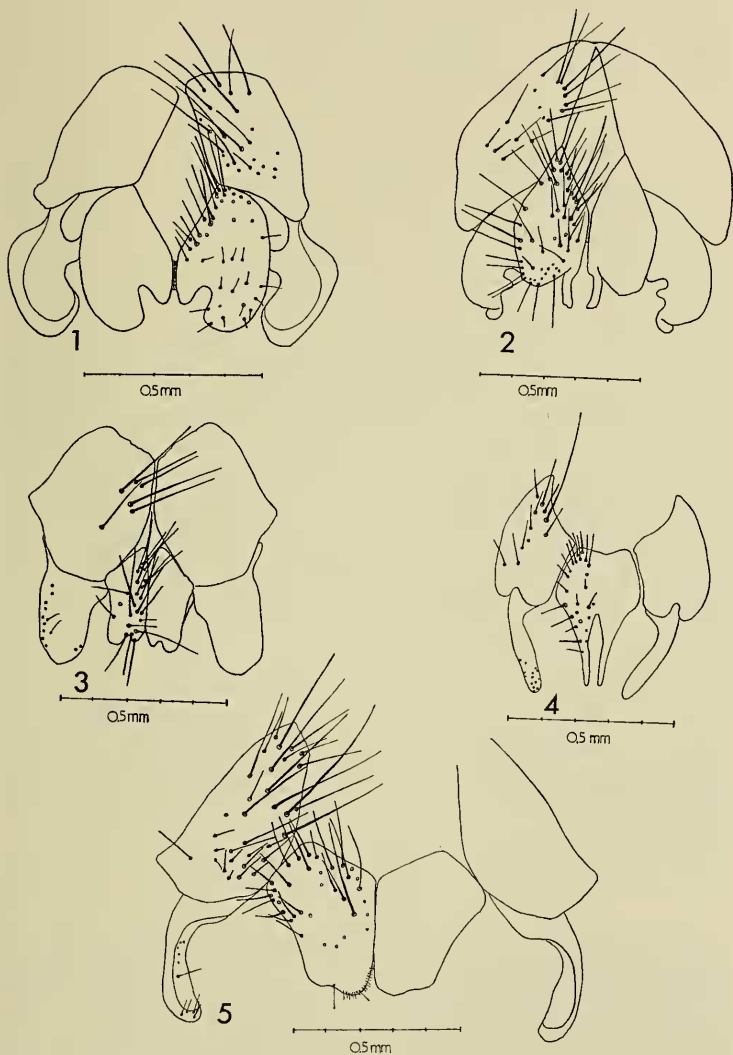
*Locality*: Kichwamba, Ankole (District), Uganda, 23-29 April 1968; 1 ♂, leg. P. J. Spangler.

*Types*: Holotype ♂ (USNM No. 70922) in the collection of the Smithsonian Institution, Washington.

#### *Musca setulosa* new species

Using van Emden's (1939) key this species leads to *Musca munroi* Patton, but it differs in the following points: *Musca setulosa* is bigger and appears darker, the contrast of the pattern on the abdomen is much more striking, the sternites are all black and just above the suprasquamal ridge there are black bristles.

*Female*: Head with black ground-color, buccae and parafacialia densely grey dusted. Proboscis and palpi black, antennae and antennal groove black, though in certain light last antennal segment and antennal groove with greyish reflection; arista with long rays. Frons black, at vertex about 0.4 times as wide as length of eyes. Width of frontal stripe at middle about half as wide as frons. About 10 pairs of strong and cruciate parafrontal setae, two pairs of short but distinct proclinate fronto-orbital bristles as well as some short bristles distributed irregularly on parafrontalia. Ocellar triangle black with one pair of proclinate long ocellars just above anterior ocellus, inner and outer verticals well-developed and long. Eyes bare.



FIGS. 1-5. Cerci and paralobi, dorsal view. 1, *Musca spangleri* new species. 2, *Morellia cerciformis* new species. 3, *Phaonia eos* new species. 4, *Spilogona ugandensis* new species. 5, *Dimorphia thoracica* new species.

Thorax black, but at least dorsally greatest portion grey dusted. The presutural portion of mesonotum with four black longitudinal vittae, fusing behind suture to two. Scutellum grey dusted with black patch at middle. Sternopleuron, mesopleuron and the anterior part of pteropleuron with grey pollinosity. Anterior thoracic spiracle white.

Chaetotaxy: acrosticals = 0 + 1, dorsocentrals = 2 + 4, all strong, posthumeral = 2, humeral = 3, notopleurals = 2, sternopleurals = 1 + 2, mesopleuron with a posterior row of about six strong setae and one anterior one. Hypopleuron bare, prosternum hairy. Suprasquamal ridge without erect bristly hairs, but black bristles just above ridge. Wings brownish, membrane uniformly covered with microtrichia; posterior cross-vein slightly sigmoid, media bent up sharply with a distinct inward dip beyond bend;  $r_{4+5}$  ventrally covered with short setae over nearly all length, stem-vein dorsally with three to five fine long hairs. Inner part of the upper calyptera transparent with yellow margin and fine black hairs on margin, outer portion white with yellow margin and yellow hairs; lower calyptera whitish, partly brownish. Halteres yellow. Legs black; femora with little whitish pollinosity; fore-tibia without posteroventral bristle; mid-tibia with four to five posteroventral bristles, two apical ones stronger than others; hind-tibia with two anteroventral bristles beyond middle, a row of anterodorsal bristles with strongest ones in apical half and two posterodorsal bristles beyond middle. Pulvilli short and brownish.

Abdomen with black ground-color and striking pattern; tergites I + II black without grey pollinosity, last three tergites with broad black apical and basal bands as well as black median longitudinal vittae, remaining parts with grey pollinosity. Sternites all black.

Length: about 8 mm.

*Male:* Unknown.

*Locality:* 25 miles south of Kichwamba (Kalinzu Forest, Ankole District), Uganda, 28 April 1968; 2 ♀♀, leg. P. J. Spangler.

*Types:* Holotype ♀ (USNM No. 70923) in the collection of the Smithsonian Institution, Washington; 1 paratype ♀ in the collection of the South African Institute for Medical Research.

### ***Morellia cerciformis* new species**

(Figure 2)

In Peris' (1961) key this species leads to *Morellia longiseta* van Emden and *Morellia nilotica* (Lw.). The male is at once distinguishable from the latter by its lower calyptera, which is dark brown, including the margin, as well as the presence of about five strong anteroventral setae on the apical third of the hind-tibia. From *Morellia longiseta* this species differs by the four to five posteroventral setae in the apical part of the fore-tibia and in the absence of the long posteroventral setae of the hind-tibia.

*Male:* Head with face black, parafacialia and buccae grey dusted. Proboscis and palpi black. Antennae black, antennal groove black though in certain light with grey reflections, arista long, longest rays about 1.5

times as long as width of third antennal segment. Frons black, at narrowest point not much wider than anterior ocellus. Parafrontal setae numerous and of unequal length and thickness, becoming stronger towards antennal groove. Fronto-orbital bristles wanting. Ocellar triangle without strikingly long setae. Only one strong pair of verticals present. Eyes with some very short hairs. Facets all of nearly same size, only outer ones smaller.

Thorax of black ground-color, in certain light with blue reflections. Presutural part of mesonotum with white dusted median longitudinal vitta, extending to middle of postsutural part of mesonotum. One very small grey spot on each side of this vitta on presutural portion. Humeral calli and area behind white dusted. Pleura dark in addition to grey dusted sternopleuron and lower portion of mesopleuron. Anterior thoracic spiracle black.

Chaetotaxy: acrostical bristles = 0 + 3, anterior ones rather weak and hairlike, dorsocentrals = 0 + 3, posthumeral = 2, humeral = 5, notopleurals = 2, sternopleurals = 1 + 2, mesopleuron with a posterior row of five to six strong setae in upper half followed by smaller setae in lower half. Hypopleuron and prosternum bare. Wing-membrane brownish and uniformly covered with microtrichia; media slightly curved upwards;  $r_{4+5}$  ventrally and dorsally with a row of short setae, extending at least to anterior cross-vein r-m. Inner part of upper calyptera brownish transparent, outer portion white with yellow margin; lower calyptera including margin dark brown. Halteres yellow. Legs dark brown to black; fore-coxa white dusted; fore-tibia with about five fine hairlike posteroventral setae on apical third, longest not much longer than twice diameter of apical portion of tibia; mid-femur with a weak dorso-apical thickening, covered with some strong setae; mid-tibia with about five posteroventral setae, irregularly distributed over whole length, strongest ones at apical half; hind-tibia with five anteroventral setae in apical third and a row of anterodorsal setae, strongest ones beyond middle forming the end, a posterodorsal bristle in basal third and a very long one at apical third. Pulvilli long and brownish.

Abdomen black, tergites III and IV only laterally and ventrally with grey pollinosity, tergite V dorsally golden-yellow dusted. Sternites black. Hypopygium (Fig. 2) with a striking elongation on cerci.

*Female:* With respect to color of body, female resembles male though fifth tergite is black. Frons at narrowest point 0.45 times as wide as length of one eye. Frontal stripe well-developed and dilating above, lower part black, upper part golden yellow. Buccae, parafacialia and parafrontalia grey dusted. Parafrontal setae strong, two pairs of proclinate fronto-orbitals present, ocellar triangle with three pairs of well-developed bristles, anterior one strongest. Upper calyptera whitish, lower one whitish to brownish, both with orange to brownish margins. Fore-tibia without long posteroventral setae; mid-femur without dorso-apical thickening; hind-tibia with anteroventral setae, not longer than diameter of tibia.

Length: about 8 mm.

*Locality:* Ngong Forestry Station, Kenya, 13–20 April 1968, Malaise trap; 1 ♂, 1 ♀, leg. P. J. Spangler.

*Types:* Holotype ♂ (USNM No. 70924) and paratype ♀ in the collection of the Smithsonian Institution, Washington.

***Phaonia eos* new species**

(Figure 3)

In van Emden's (1943) key, this species ends at *Phaonia muscinoides* van Emden, but it differs from this species by its orange abdomen and yellowish palpi.

*Male:* Head grey dusted, though of dark ground-color. Proboscis brown, palpi yellowish, antennae bright yellow, especially last segment. Arista with long rays. Frons at its narrowest point about 1.5 times as wide as anterior ocellus. Only lower half of parafrontalia with about six pairs of strong reclinate setae. One pair of small proclinate setae in front of anterior ocellus and one pair of slightly stronger but reclinate ones at level of ocellus. First pair of ocellars long and stronger than parafrontals. Verticals not strikingly long-developed. Eyes without conspicuous hairs and enlarged facets.

Thorax of dark brown to black ground-color. Dorsally with greyish pollinosity. The presutural part of mesonotum with two dark longitudinal vittae, postsutural part with irregular pattern. Scutellum yellowish, with fine setae ventrolaterally. Most parts of mesopleuron, sternopleuron, hypopleuron and pteropleuron dark brown or black, remaining parts yellow. Anterior thoracic spiracle yellow.

Chaetotaxy: acrosticals = 3 + 4, dorsocentrals = 2 + 3, posthumeral = 2 and one anterior shorter one, humerals = 3, notopleurals = 2, the posterior one shorter than the pre-alar bristle, postalars = 2, sternopleurals = 1 + 2, mesopleuron with posterior row of 5–6 setae and one anterior one. Wings hyaline, the membrane covered with microtrichia, the veins yellowish to brownish. First longitudinal vein ( $r_1$ ) only dorsally,  $r_{4+5}$  dorsally and ventrally covered with fine setulae. Upper calyptera transparent, lower calyptera yellowish, both with yellow margins. Legs all yellow; fore-tibia without distinct posteroventral bristle; mid-femur with some posteroventral setae in basal half, mid-tibia with two posterior setae in basal half and a third seta in apical half; hind-femur with row of anterodorsal setae as well as row of anteroventral setae, apically short row of three to five strong curved dorsal bristles; hind-tibia with four anteroventral bristles in apical two-thirds, the two apical ones much stronger, one well-developed anterodorsal at middle and one very long posterodorsal seta in apical third.

Abdomen yellow, last two tergites brownish and each with a row of rather strong marginal setae. Sternites yellow. Hypopygium as in Fig. 3.

Length: about 6 mm.

*Female:* Unknown.

*Locality:* Kichwamba, Ankole (District), Uganda, 23–29 April 1968; 1 ♂, leg. P. J. Spangler.

*Types:* Holotype ♂ (USNM No. 70925) in the collection of the Smithsonian Institution, Washington.

***Spilogona ugandensis* new species**

(Figure 4)

*Spilogona ugandensis* resembles *Spilogona semifasciata* van Emden but differs from it in its thoracic pattern as well as the presence of complete transverse rows of discal setae on the fourth and fifth tergites.

*Male:* Head densely grey dusted, frontal stripe well-developed with black ground-color. Frons at narrowest point about 1.5 times as wide as width of ocellar triangle. Proboscis, palpi and antennae dark brown, last antennal segment grey dusted. Frons with four pairs of strong cruciate parafrontal setae. Anterior pair of ocellar bristles well-developed, but never as long as parafrontals. Eyes not conspicuously haired. Facets all of same size.

Thorax cinerous grey. Dorsal presutural portion of mesonotum with a narrow median dark longitudinal vitta extending to suture, another dark vitta extending to posterior presutural dorsocentral seta and a short vitta along posthumeral. The two short vittae fusing in front of anterior dorsocentrals. Postsutural part of mesonotum with a broad transverse brown band, extending from suture to second postsutural dorsocentral seta. Scutellum at basal half with a semicircular brown patch. Laterally only hypopleuron darkened.

Chaetotaxy: acrosticals = 0 + 1, the anterior ones numerous but all very small and hairlike, dorsocentrals = 2 + 3, anterior presutural one at most half as long as posterior one, postalar = 2, posthumeral = 2, humeral = 2, notopleurals = 2, posterior notopleural one much smaller than prealar bristle, sternopleurals = 1 + 2, mesopleuron with a posterior row of six strong setae and one smaller anterior one, hypopleuron and prosternum bare. Wings brownish, the membrane covered with microtrichia; veins brown and bare; media straight. Upper and lower calyptera yellowish white, halteres pale. Legs with femora dark brown, apex usually yellow orange; tibiae yellow to brown; tarsal segments brown. Fore-tibia with a distinct submedian posteroventral bristle; mid-femur with some strong anterior setae in basal half, but without an anterior subapical one; mid-tibia with two posterior setae in middle third; hind-femur with a row of anterodorsal setae over entire length and a short row of anteroventral setae in apical half; hind-tibia with two well-developed anterodorsal setae and two anteroventral setae, all in apical half.

Abdomen yellow to brown. Tergites I + II in anterior part brown, the posterior part yellow; tergite III with a more or less distinct triangularly developed dark patch in middle; tergites IV and V brown with grey pollinosity, both tergites with complete transverse row of long, strong marginal and discal setae. Hypopygium as in Fig. 4.

Length: About 5.5 mm.

*Female*: Unknown.

*Locality*: Kichwamba, Ankole (District), Uganda, 23–29 April 1968; 2 ♂♂, leg. P. J. Spangler.

*Types*: Holotype ♂ (USNM No. 70926) in the collection of the Smithsonian Institution, Washington; 1 paratype ♂ in the collection of the South African Institute for Medical Research.

***Dimorphia thoracica* new species**

(Figure 5)

Using van Emden's (1951) key, this species runs to *Dimorphia tristis* (Stein), but it is distinguishable by the dark brownish wings and in the male by the completely dark thorax and the dark brown tips of the front femora.

*Male*: Buccae and parafacilia grey dusted, parafrontalia black. Proboscis, palpi and antennae dark brown, third antennal segment with little grey pollinosity. Antennal groove grey. Frons at its narrowest point about same width as ocellar triangle and with 8–10 pairs of strong long cruciate parafrontal setae, longest one above antennal groove. Parafrontals below vertex small and proclinate. Anterior pair of ocellars longer than longest parafrontal. Verticals rather weak. Eyes without conspicuous hairs.

Thorax of black ground-color. Dorsal surface and pleura with little grey pollinosity. Two black longitudinal vittae on presutural portion of mesonotum. Scutellum ventrolaterally yellow. Anterior thoracic spiracle yellow to brown.

Chaetotaxy: acrosticals = 0 + 1, dorsocentrals = 2 + 4, humerals = 3, anterior one smaller than others, posthumerals = 2, notopleurals = 2, postalars = 2, sternopleurals = 1 - 2 + 2, mesopleuron with a row of six to eight posterior setae and two anterior ones. Wings dark brownish, the membrane covered with microtrichiae. Veins dark brown, radial sector and subcosta with small setae dorsally and ventrally at base; media with some fine setae dorsally and ventrally over nearly entire length; cubitus with some fine setae only ventrally at base. Basicostal scale yellow, upper calyptera brownish transparent with a dark brown margin, lower calyptera yellowish brown, with a light brown margin. Halteres yellow. Legs all bright yellow, tarsal segments brown to dark brown, especially hind tarsal segments; fore-femur with a dark dorso-apical patch, in some specimens even on all femora. Fore-tibia without a posteroventral seta, in apical half numerous short fine golden-brownish hairs, forming a brush; mid-femur with about four anterior bristles at middle as well as two apical ones at apical third, in basal half some strong ventral setae and subapically about four strong posteroventral ones; mid-tibia usually with two long posterior setae in apical half; hind-tibia with one anterodorsal at middle and one anteroventral beyond middle.

Abdomen with yellow ground-color. Tergites I + II yellow, tergite III dorsally with a dark brown median longitudinal vitta, widening apically and forming an apical band in some specimens. Two to three marginal setae on each side; tergite IV dark brown dorsally, only anterior lateral



portions yellow, a complete row of strong marginals; tergite V brown dorsally (some specimens with a narrow yellow apical band) and with a row of strong marginals as well as a row of strong discals. Sternites yellow, last one brown. Hypopygium as in Fig. 5.

*Female*: Frons at narrowest point about 0.45 times as wide as length of one eye. Frontal stripe well-developed, greyish-black. Two pairs of strong verticals. Thorax dorsally and upper portion of mesopleuron black, humeral calli and other pleura yellow. Femora without dark apex. Legs and wings as in male, but setae of veins stronger and more numerous. Abdomen dark brown to black, only tergite I + II yellow; tergite V with a narrow yellow apical band. Sternites orange to brown.

Length: about 8.5 mm.

*Locality*: Ngong Forestry Station, Kenya, 13–20 April 1968; 5 ♂♂, 1 ♀ Malaise trap, leg. P. J. Spangler.

*Types*: Holotype ♂ (USNM No. 70927), 2 paratypes ♂♂ and 1 paratype ♀ (USNM No. 70927) in the collection of the Smithsonian Institution, Washington; 2 paratype ♂♂ in the collection of the South African Institute for Medical Research.

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